SPECIFICATION

ARL-2835CW-L80

FEATURES

- PLCC-2 Package.
- Extremely wide viewing angle.
- Suitable for all SMT assembly and solder process.
- Available on tape and reel.
- Moisture sensitivity level: Level 4.
- Package: 4000pcs/reel.
- RoHS compliant.

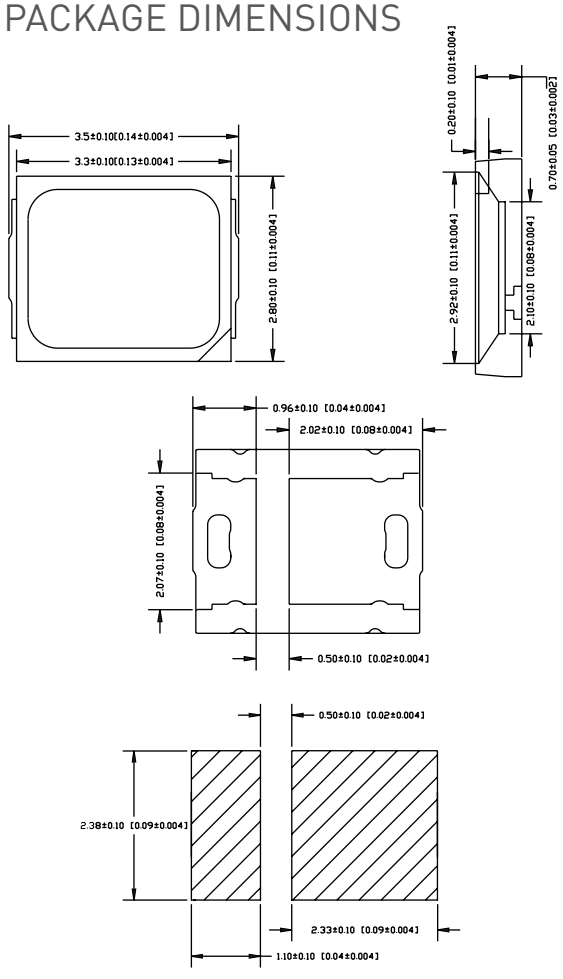
DESCRIPTION

- The White LED which was fabricated using a blue chip and the phosphor.

APPLICATIONS

- Optical indicator.
- Indoor display
- Backlight for LCD, switch and Symbol, display
- Tubular light application
- General use

PACKAGE DIMENSIONS



Notes 1. All dimension units are millimeters.
2. All dimension tolerance is ±0.15mm unless otherwise noted.

TECHNICAL SPECIFICATIONS

Part number	**021541**
Model	**ARL-2835CW-L80 White (D489W)**
Color	**White**
Chip Material	**InGaN**
Lens Type	**Yellow Diffused**

Mass Production list

CCT (K) min	CCT (K) type	CCT (K) max	Φ(lm) min	Φ(lm) typ	Test Conditions
5300	5700	6000	23	25	IF=60mA
4250	4500	4750	23	25	IF=60mA
3250	3450	3650	22	24	IF=60mA
3050	3250	3450	22	24	IF=60mA
2600	2700	2800	20	22	IF=60mA

Electrical / Optical Characteristics-White (At TA=25°C)

Parameter	Symbol	Min	Typ	Max	Units	Test Conditions
Forward Voltage	V_F	2.8	-	3.4	V	IF=60mA
Viewing Angle [1]	$2_{\theta 1/2}$	-	120	-	Deg	IF=60mA
Color Rendering Index	Ra	80	-	-		IF=60mA
Reverse Current	IR	-	-	10	μa	VR = 5V

Notes 1. 2θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. The above luminous flux measurement allowance tolerance is ±10%.
3. The above Color Rendering Index measurement allowance tolerance is ±2.
4. The above forward voltage measurement allowance tolerance is ±0.1V.
5. The above color coordinates measurement allowance tolerance is ±0.003.

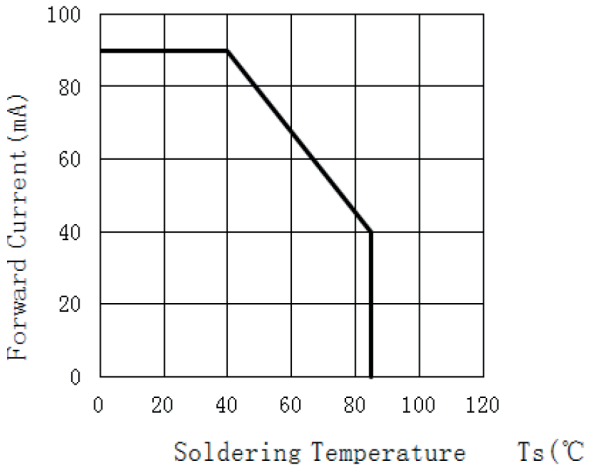
Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Power Dissipation	P_D	306	W
Forward Current	I_F	90	mA
Peak Forward Current [1]	I_{FP}	150	mA
Reverse Voltage	V_R	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature Range	T_{OPR}	-40~+85	°C
Storage Temperature Range	T_{STG}	-40~+100	°C
LED Junction Temperature	T_J	115	°C

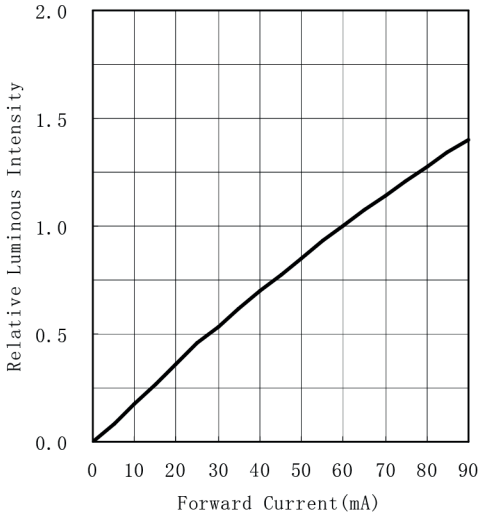
Notes 1. 1/10 Duty cycle, 0.1ms pulse width

TYPICAL OPTICAL CHARACTERISTICS CURVES

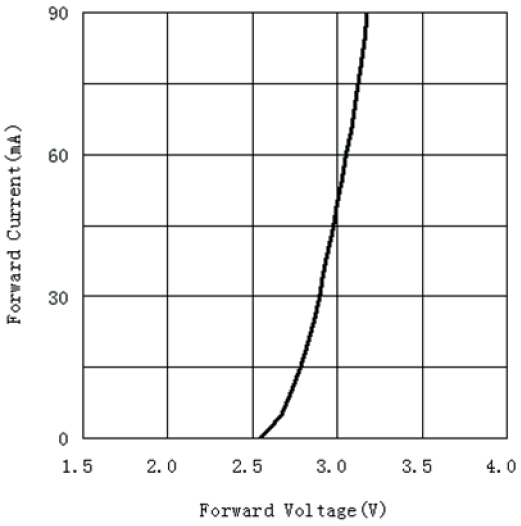
Soldering Temperature vs. Forward Current



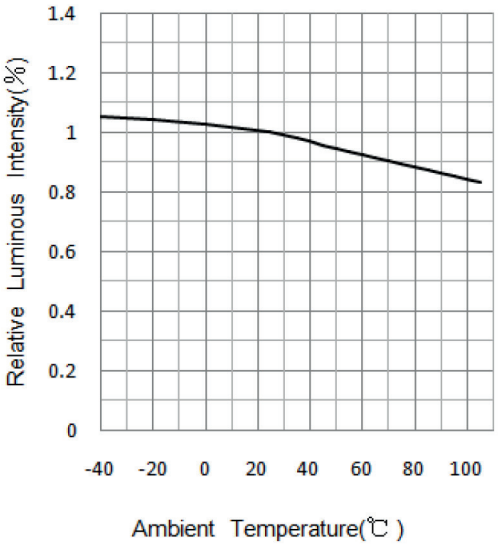
Forward Current VS. Relative Intensity



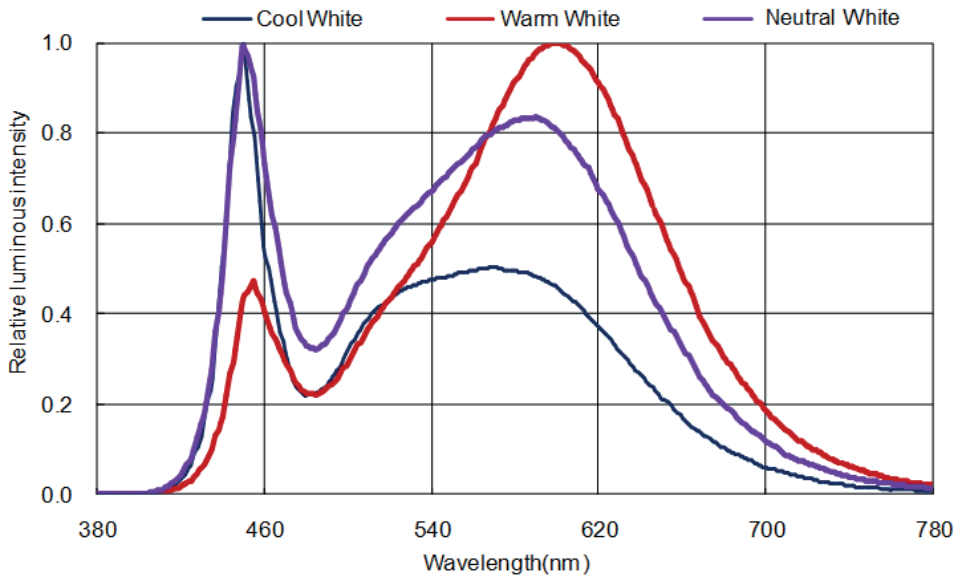
Forward Voltage VS. Forward Current



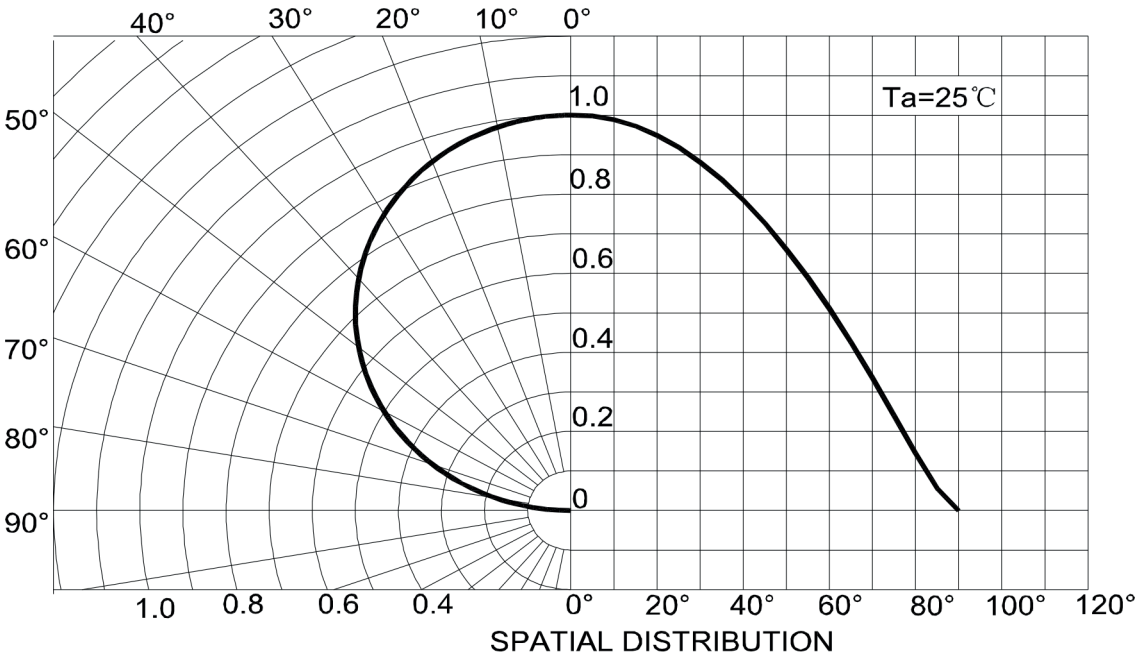
Ambient Temperature VS. Relative Intensity



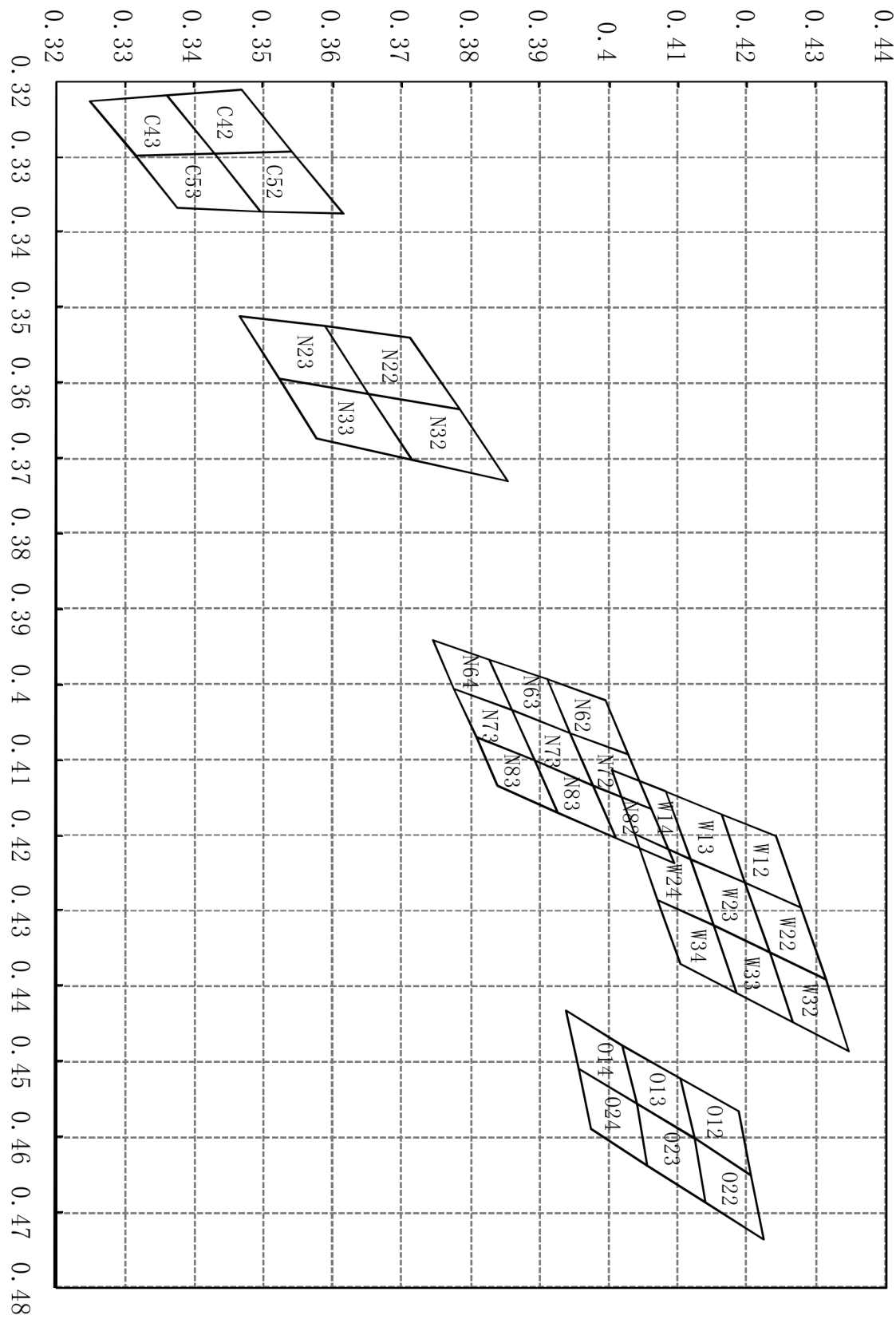
TYPICAL OPTICAL CHARACTERISTICS CURVES



RADIATION DIAGRAM



RADIATION DIAGRAM



BIN RANGE OF CHROMATICITY COORDINATE

Bin Code Bin	CIE_x	CIE_y	Bin Code Bin	CIE_x	CIE_y	Bin Code Bin	CIE_x	CIE_y
C42 5700-6000K	0. 3211	0. 3468	C52 5300-5700K	0. 3294	0. 3542	C43 5700-6000K	0. 3219	0. 3360
	0. 3294	0. 3542		0. 3376	0. 3616		0. 3296	0. 3429
	0. 3296	0. 3429		0. 3372	0. 3497		0. 3298	0. 3315
	0. 3219	0. 3360		0. 3296	0. 3429		0. 3227	0. 3251
C53 5300-5700K	0. 3296	0. 3429	N22 4500-4750K	0. 3540	0. 3714	N23 4500-4750K	0. 3526	0. 3590
	0. 3372	0. 3497		0. 3636	0. 3784		0. 3615	0. 3653
	0. 3368	0. 3376		0. 3615	0. 3653		0. 3594	0. 3522
	0. 3298	0. 3315		0. 3526	0. 3590		0. 3512	0. 3465
N32 4250-4500K	0.3636	0.3784	N33 4250-4500K	0.3615	0.3653	N62 3510-3650K	0.4021	0.3995
	0.3731	0.3853		0.3703	0.3716		0.4093	0.4028
	0.3703	0.3716		0.3675	0.3578		0.4064	0.3944
	0.3615	0.3653		0.3594	0.3522		0.3994	0.3912
N63 3510-3650K	0.3994	0.3912	N64 3510-3650K	0.3968	0.3828	N72 3380-3510K	0.4093	0.4028
	0.4064	0.3944		0.4035	0.3861		0.4166	0.4062
	0.4035	0.3861		0.4006	0.3777		0.4134	0.3977
	0.3968	0.3828		0.3941	0.3745		0.4064	0.3944
N73 3380-3510K	0.4064	0.3944	N74 3380-3510K	0.4035	0.3861	N82 3250-3380K	0.4166	0.4062
	0.4134	0.3977		0.4102	0.3893		0.4238	0.4095
	0.4102	0.3893		0.4070	0.3808		0.4204	0.4010
	0.4035	0.3861		0.4006	0.3777		0.4134	0.3977
N83 3250-3380K	0.4134	0.3977	N84 3250-3380K	0.4102	0.3893	W12 3290-3450K	0.4201	0.4243
	0.4204	0.4010		0.4169	0.3925		0.4296	0.4278
	0.4169	0.3925		0.4135	0.3840		0.4264	0.4198
	0.4102	0.3893		0.4070	0.3808		0.4172	0.4163
W13 3290-3450K	0.4172	0.4163	W14 3290-3450K	0.4143	0.4084	W22 3170-3290K	0.4296	0.4278
	0.4264	0.4198		0.4231	0.4118		0.4391	0.4313
	0.4231	0.4118		0.4199	0.4038		0.4356	0.4232
	0.4143	0.4084		0.4114	0.4004		0.4264	0.4198

BIN RANGE OF CHROMATICITY COORDINATE

Bin Code Bin	CIE_x	CIE_y	Bin Code Bin	CIE_x	CIE_y
W23 3170-3290K	0.4264	0.4198	W24 3170-3290K	0.4231	0.4118
	0.4356	0.4232		0.4320	0.4152
	0.4320	0.4152		0.4285	0.4071
	0.4231	0.4118		0.4199	0.4038
W32 3050-3170K	0.4391	0.4313	W33 3050-3170K	0.4356	0.4232
	0.4486	0.4348		0.4447	0.4267
	0.4447	0.4267		0.4409	0.4186
	0.4356	0.4232		0.4320	0.4152
W34 3050-3170K	0.4320	0.4152	O12 2700-2800K	0.4567	0.4187
	0.4409	0.4186		0.4650	0.4207
	0.4370	0.4105		0.4603	0.4124
	0.4285	0.4071		0.4522	0.4104
O13 2700-2800K	0.4522	0.4104	O14 2700-2800K	0.4478	0.4020
	0.4603	0.4124		0.4557	0.4040
	0.4557	0.4040		0.4510	0.3957
	0.4478	0.4020		0.4433	0.3937
O22 2600-2700K	0.4650	0.4207	O23 2600-2700K	0.4603	0.4124
	0.4737	0.4223		0.4688	0.4140
	0.4688	0.4140		0.4639	0.4056
	0.4603	0.4124		0.4557	0.4040
O24 2600-2700K	0.4557	0.4040			
	0.4639	0.4056			
	0.4590	0.3973			
	0.4510	0.3957			

RELIABILITY TEST ITEMS AND CONDITIONS

Test Item	REF. Standard	Test condition	Times	Quantity	Accept
Reflow	JESD22-B106	Temp: 260°max T=10 sec	3 times.	22Pcs.	0/1
Temperature Cycle	JESD22-A104	120°±5°C 30 min. ↑↓5 min -40°±5°C 30 min.	100 cycles	22Pcs.	0/1
High Temperature Storage	JESD22-A103	Temp:100°±5°C	1000 Hrs	11Pcs.	0/1
Low Temperature Storage	JESD22-A119	Temp:-40°±5°C	1000 Hrs	11Pcs.	0/1
Life Test	JESD22-A108	Ta=25°±5°C IF=60mA	1000 Hrs	11Pcs.	0/1
High Temperature High Humidity Life Test	JESD22-A101	85°±5°/ 85%RH IF=30mA	1000 Hrs	11Pcs.	0/1

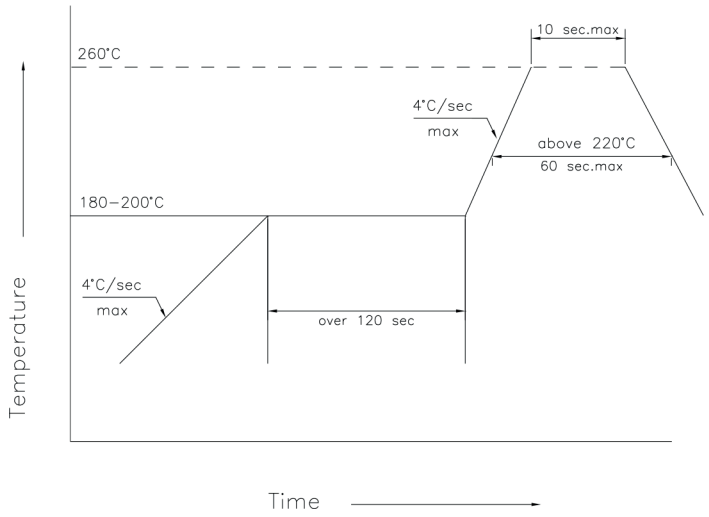
FAILURE CRITERIA

Test Item	Symbol	Test condition	Failure Criteria	
			min	max
Forward Voltage	VF	IF=60mA	-	U.S.L*)x1.1
Reverse Current	IR	VR = 5V	-	10uA
Luminous Flux	Lm	IF=60mA	1000 Hrs	-

U.S.L: Upper Specification Limit

*The technical information shown in the data sheets is limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.

SMT REFLOW SOLDERING INSTRUC

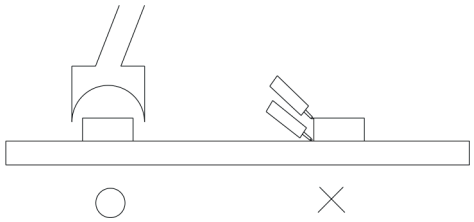


1.Reflow soldering should not be done more than two times.
2.When soldering , do not put stress on the LEDs during heating

SOLDERING IRON
1.When hand soldering, keep the temperature of iron below less 300 less than 3 seconds
2.The hand solder should be done only one times

REPAIRING
Repair should not be done after the LEDs have been soldered. When repairing is unavoidable,
a double-head soldering iron should be used (as below figure). It should be confirmed in advance
whether the characteristics of LEDs will or will not be damaged by repairing.

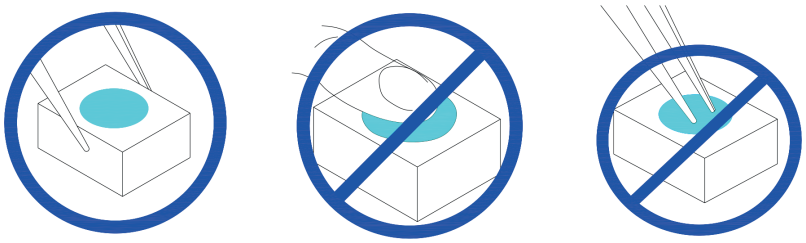
CAUTIONS
The encapsulated material of the LEDs is silicone.
Therefore the LEDs have a soft surface on
the top of package. The pressure to the top surface will be influence to the reliability of the LEDs.
Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use
the picking up nozzle, the pressure on the silicone resin should be proper.



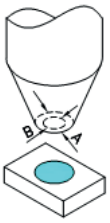
HANDLING PRECAUTIONS

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more prone to damage by external mechanical force . As a result, Special handling precautions must be observed during assembling using silicone encapsulated LED products, Failure to comply might leads to damage and premature failure of the LED.

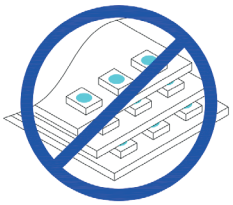
1.Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.



2.The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible. A pliable material is suggested for the nozzle tip to avoid
scratching or damaging the LED surface during pickup. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



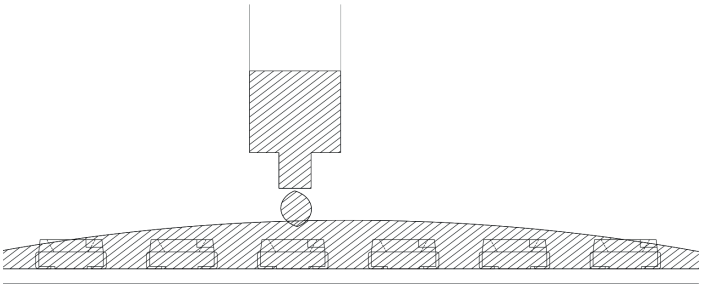
3.Do not stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage the internal circuitry



4.Not suitable to operate in acidic environment, PH<7

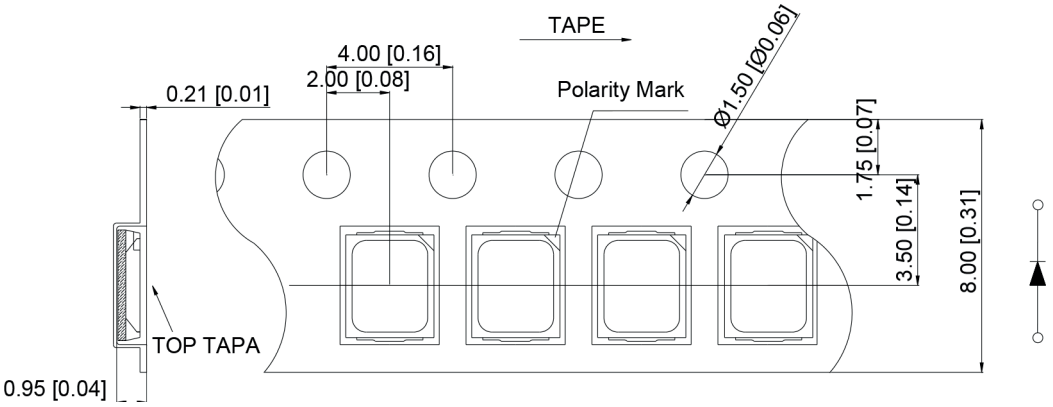
5.LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material.

6.When we need to use external glue for LED application products, please make sure that the external glue matches the LED packaging glue. Additionally ,as most of LED packaging glue is silica gel, and it has strong Oxygen permeability as well as strong moisture permeability; in order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM,the single content of Chlorine element is required to be less than 900PPM,the total content of Bromine element and Chlorine element in the external glue of the application products is required to be less than 1500PPM.

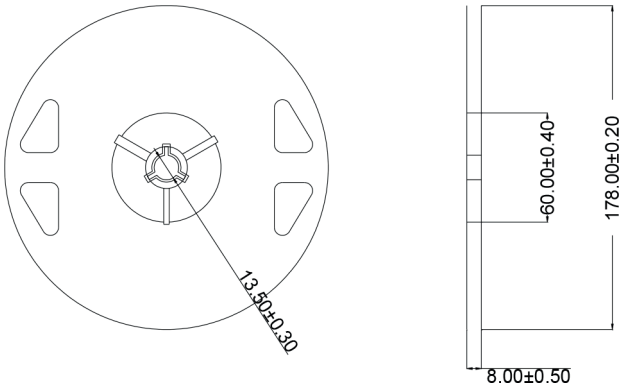


7.Other points for attention, please refer to our LED user manual.

TAPE SPECIFICATIONS



REEL DIMENSIONS



MOISTURE RESISTANT PACKAGING